

Appln No. 10/040,456  
Amdt. Dated December 12, 2003  
Reply to Office action of October 21, 2003

3

Amendments to the Claims:

Amend the claim set, replacing all prior versions, without prejudice or disclaimer of the subject matter thereof, as detailed in the following complete listing of all claims:

1. (currently amended) An apparatus for molding a sheet of thermoplastic material into an array of microstructures comprising ~~A~~ pair of molds formed substantially of silicon or silicon alloy ~~for molding a sheet of thermoplastic material into an array of microstructures,~~ each of the molds being comprising a substantially planar wafer having a working face and rear face, the molds each having one or more micro fabricated recesses in their working faces which, when the working faces are placed face to face, define at least one cavity between the two molds for receiving said thermoplastic material, wherein the recesses on the molds are configured such that the molds only contact each other on the working faces, when the working faces are placed face to face.
2. (currently amended) The pair of molds Apparatus as claimed in claim 1 wherein, in plan view one of the molds has at least one first recess formed in the respective working face for each cavity and the other mold has at least one first groove formed in the respective working face for each cavity, and  
wherein,  
when the two molds are in use, the at least one first recess defines a central portion of the cavity and the at least one first groove defines a perimeter wall portion of the cavity extending from the edges of the central portion.
3. (currently amended) The pair of molds Apparatus as claimed in claim 1 wherein one of the molds has a recess therein having a base and one or more pillars of mold material extending from the base to the plane of the respective working face.
4. Deleted
5. Deleted
6. (currently amended) The pair of molds Apparatus as claimed in claim 1, wherein the working surfaces have been polished using conventional semiconductor wafer polishing techniques and the recesses have been formed using conventional semiconductor etching techniques.

AppIn No. 10/040,456  
Amdt. Dated December 12, 2003  
Reply to Office action of October 21, 2003

4

7. (new) An apparatus for molding a sheet of thermoplastic material into an array of microstructures comprising a pair of molds formed substantially of silicon or silicon alloy, each mold comprising a substantially planar wafer, a working face, and at least one recess formed in the working face, wherein when the working faces of the pair of molds are brought into contact, the recesses of the molds together define at least one cavity having a microstructure shape adapted to receive the thermoplastic material and form the thermoplastic material into said microstructure.

8. (new) Apparatus according to claim 7 wherein the molds are adapted to receive a sheet of said thermoplastic material therebetween, and wherein said cavity is adapted to receive thermoplastic material forced from between said working faces when said working faces are brought into contact.

9. (new) Apparatus according to claim 7 wherein the cavity is adapted to be substantially filled with said thermoplastic material when the working faces of the pair of molds are brought into contact.